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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 11241P3 WORH | FOR FURTHER ACTION | See Form PCT/PEA/416 |
| International application No. PCT/GB2004/004591 | International filing date (day/month/year) 29.10.2004 | Priority date (day/month/year) 01.11.2003 |
| International Patent Classification (IPC) or national classification and IPC C11D3/00, C11D1/835, C11D3/20, C11D3/22, C11D3/16 | | |
| Applicant RECKITT BENCKISER INC | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | |
| Date of submission of the demand 30.08.2005 | Date of completion of this report 17.10.2005 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Hillebrecht, D Telephone No. +49 89 2399-8168 | |

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**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/004591

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-22 as originally filed

Claims, Numbers

1-6 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-6 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-6 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-6 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Reference is made to the following documents:

- D1: US-A-6 087 319 (NORMAN CLARE L) 11 July 2000
- D2: WO 00/09643 A (RECKITT & COLMAN INC) 24 February 2000
- D3: US-A-5 411 585 (AVERY ET AL) 2 May 1995
- D5: US-B1-6 306 810 (CHEUNG TAK WAI ET AL) 23 October 2001
- D6: US-B1-6 239 092 (PAPASSO ET AL.) 29 May 2001

V.

1. The subject-matter of present claim 1 defines an aqueous acidic hard surface cleaning and disinfection composition comprising
 - a) non-ionic surfactant(s),
 - (b) quaternary ammonium surfactant(s),
 - (c) water soluble organic acid(s),
 - (d) a cellulose based thickener,
 - (e) a film-forming organosilicone quaternary ammonium compound,
 - (f) water, and
 - (g) further optional constituents.

None of the documents cited in the International Search Report discloses composition comprising all of features (a) to (f). Thus, novelty has to be acknowledged (Article 33 (1) and (2) PCT). E.g. in D1 hydroxyethyl cellulose is only optional and examples 21 and 23 of D3 were acidified with an inorganic acid.

2. However, the subject-matter of claim 1 lacks an inventive step over any of D1 to D5 for the reasons set forth below:

The problem to be resolved resides in providing a hard surface cleaner which exhibits good cleaning, disinfecting and long term stability, especially on ceramic surfaces like lavatory surfaces. Moreover, the composition should provide a benefit against subsequent buildup of limescale (see application page 1, line 6 to page 2, line 17).

It is generally known that nonionic surfactants exhibit a good cleaning performance, quaternary ammonium compounds are efficient disinfectants and cellulose derivatives

can be used as thickeners. The skilled worker would for this reason, combine respective (a), (b) and (d). In order to provide an acidic composition, it is obvious to add an acidic component. Applicants have chosen organic acids. First of all, acidic cleaners are often used for removing soils like limescale and they are known for their efficiency. Applicants did not show any unexpected advantage in selecting organic acids. However, organic acids are nowadays generally preferred due to their environmental advantages and they are more friendly to the surface of the objects to be cleaned. Moreover, a variety of organic acids show advantages in view of their chelating properties. Applicants have apparently selected these components for their well-known properties. This applies also to component (e), which is known to provide also germicidal properties and at the same time forms a film, which prevents re-soiling.

D1 and D2 differs from the subject-matter of claim 1 only in that a thickening agent is optional and that no further quaternary ammonium compound is present. However, it is obvious that the germicidal performance may be improved, when using a further disinfecting agent, while a thickener is known to be especially advantageous when cleaning vertical surfaces. See D1, col. 1, lines 24 to 48, col. 5, lines 1 to 21 and claims and examples, D2, page 1, line 5 to page 3, line 23, , page 8, line 4, examples, and claims. Although D1 requires saccharide surfactants to be present, these surfactants are nonetheless nonionic surfactants as required by the present claims. While D1 tries to omit ammonium quaternary compounds for environmental reasons, this problem is presently not an issue. Thus, there is no reason for the skilled to remove these compounds when high germicidal performance has priority. The absence of these compounds is not mandatory in D1.

Regarding D2, thickeners are optional compounds mentioned on page 8 of this document. There is no indication that cellulose based thickener provides any unexpected advantage to the compositions. It is within the routine procedure to select appropriate thickeners which are stable in the respective composition to provide the required viscosity. This applies also to the addition of a quaternary ammonium surfactant as a further germicidal compound, if further germicidal activity is required or in order broaden the spectrum of antimicrobial activity.

D3, especially examples 21, 23, 35, 37, 39 and 41, differ from present claim 1 only in

that an inorganic acid is used instead of an organic acid. The document teaches that the stability of those compositions comprising hydroxyethyl cellulose is good when the is at a low level. Moreover, the compositions disclosed therein are efficient in disinfection and cleaning performance. Applicants failed to show any unexpected effect caused by the selection of the organic acids, which are however, already suggested as useful pH adjusting agents in D3 (see column 6, lines 60 to 63).

Similar considerations apply to D5.

Since applicants have not shown any unexpected advantage in using specified components, the subject-matter of claim 1 must be regarded as a mere collocation, just providing an obvious alternative to those compositions known already from D1 to D3, and D5.

At least, the skilled worker, looking for further improvement of the compositions of D6, which is directed to the a plurality of the common problems, knows from any of D1 to D3 and D5 that the film forming component (e) shows further benefits in view of re-soiling and germicidal properties. Thus, the skilled worker would combine component (e) with the compositions of D6 in order to arrive at the present subject-matter without involving an inventive step.

The subject-matter of claims 2 to 6 is either already known from the prior art documents or at least obvious to those skilled in the art.

VIII.

1. Although cellulose based thickeners are considered as an essential component of the claimed compositions, this is questioned when reading page 7, lines 17 to 19 of the specification using the "may" language. Article 6 PCT.
2. R_2 in the formula of claim 5 is an alk(en)ylene group. However, in the following definition it is explained as an alk(en)yl group, in contrast to Article 6 PCT.